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# ***OAR Box 1214***

*Prepped by Ollie Stewart*

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*Document Number:*

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*Docket Number:*

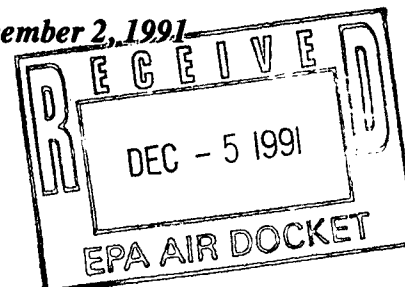
**A-91-46**



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A-91-46  
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IV-D-55

December 2, 1991



**Ms. Mary T. Smith, Director  
Field Operations and Support Division (EN-397F)  
U.S. Environmental Protection Agency  
401 M. Street S.W.  
Washington, D.C. 20460**

**Subject : Additional Details Relating to Toyota's Comments on the MMT Fuel Additive  
Waiver Request : Erratum.**

***Dear Ms. Smith :***

In a recent correspondence with your office, we provided additional information relating to our comment regarding Ethyl Corporation's MMT fuel additive waiver request. Unfortunately, that information contained a minor error.

The first page of the information included data relating to the fuel used for durability testing. This data included a specification for phosphorus content. The data relating to phosphorus content was specific to the oil used during the durability testing, and was provided to clarify any unusual characteristics of the oil used for the durability testing.

A copy of this page of the information has been included with this letter for correction. This page should replace the original page provided earlier by this office. We apologize for any inconvenience that this may have caused. If you have any questions regarding this matter, please feel free to contact Mr. Robert Babcock of my staff.

Sincerely,

*Takao Niwa*

**Takao Niwa  
General Manager  
Emissions and Certification Dept.**

Enclosure

# I. Mileage Accumulation / Emission Results

## 1. Test Method

At first, a test vehicle accumulated the mileage to 30,000 miles using gasoline with 1/32 grams per gallon MMT added. After that, the catalyst and oxygen sensors on the same test vehicle were replaced and the vehicle accumulated an additional 30,000 miles without the MMT additive.

## 2. Test Vehicle and Engine

*Vehicle* : '90MY Camry Sedan, 4A/T

*Engine* : 3S-FE (2.0L, L4)

*Emission Control System* : Multipoint Electric Fuel Injection + 2 Three Way Catalysts (Close-coupled and Under floor Catalysts) + 2 Oxygen Sensors

## 3. Test Fuel

### 1) Mileage Accumulation Test Fuel

<u>Fuel Characteristics</u>	<u>W/O MMT</u>	<u>W/ MMT</u>
MMT Additive	0	1/32 Mn g/gallon
RON	91.4	<
MON	81.5	<
RVP	9.9 psi	<
Distillation (°F)		
IBP	85	<
10%	119	<
50%	211	<
90%	343	<
EP	402	<
Olefins	6.8 v%	<
Aromatics	36.5 v%	<
Lead	0.0045 g/gal	<
<u>Oil Characteristics</u>	<u>W/O MMT</u>	<u>W/ MMT</u>
Phosphorus	0.13 wt%	<

### 2) Emission Test Fuel

EPA certification test fuel

## 4. Mileage Accumulation Cycle

Durability driving cycle developed by Toyota

A detail explanation of this driving cycle is shown in the Attachment.